



15385 Carrie Drive
 Grass Valley, CA 95949
 Office: (530) 477-8400
 Tech. Support: (530) 477-8402
 FAX: (530) 477-8403
 Sales: (800) 874-8663
 Email: tech@norcommcorp.com
 Web:www.norcommcorp.com

MODEL NC108 SINGLE-TONE BURST DECODER INSTRUCTION MANUAL

INTRODUCTION

The Model NC108 is a high stability Single Tone Burst Decoder used for tone control of repeater systems, alert paging, selective calling or for control of remote applications, using radio, microwave or voice grade wire line systems. Sub-miniature in design, it is ideal for use in mobile or portable radios as well as applications where there is limited space. Standard features are: Field tunable over frequency range, low current drain, latched and momentary outputs, PTT and Monitor/Reset input control functions. There are two versions: the NC108-A for high frequency (800Hz-3000Hz) formats and the NC108-B for low frequency (280Hz-1500Hz) formats.

OPERATION

Upon receipt of proper tone frequency and duration, the Decoder will provide a latched or signal following output for control of external circuitry (such as receiver squelch system or remote site TX keying) and a momentary output for control of vehicle horn relay. When used as a selective calling decoder to control the squelch circuitry in a receiver, the use of the PTT input lead connected to the TX (high) circuitry will allow the user to monitor the channel by a momentary touch of the PTT button prior to making a call. The monitor/reset input lead serves to reset or disable the latched output circuitry by use of the "Tone Squelch" switch on portables or the mic hang-up function on the front mount radios.

GENERAL

Although the Model NC108 Decoder has been engineered for maximum reliability, should you require technical assistance or detailed information for a specific application, i.e., interfacing, special timing or frequency format, please contact our Customer Service Dept. at 916-477-8400.

NOTE: NorComm Corporation also produces a complimentary line of Burst Encoders, Notch and Band Pass Filters.

SPECIFICATIONS

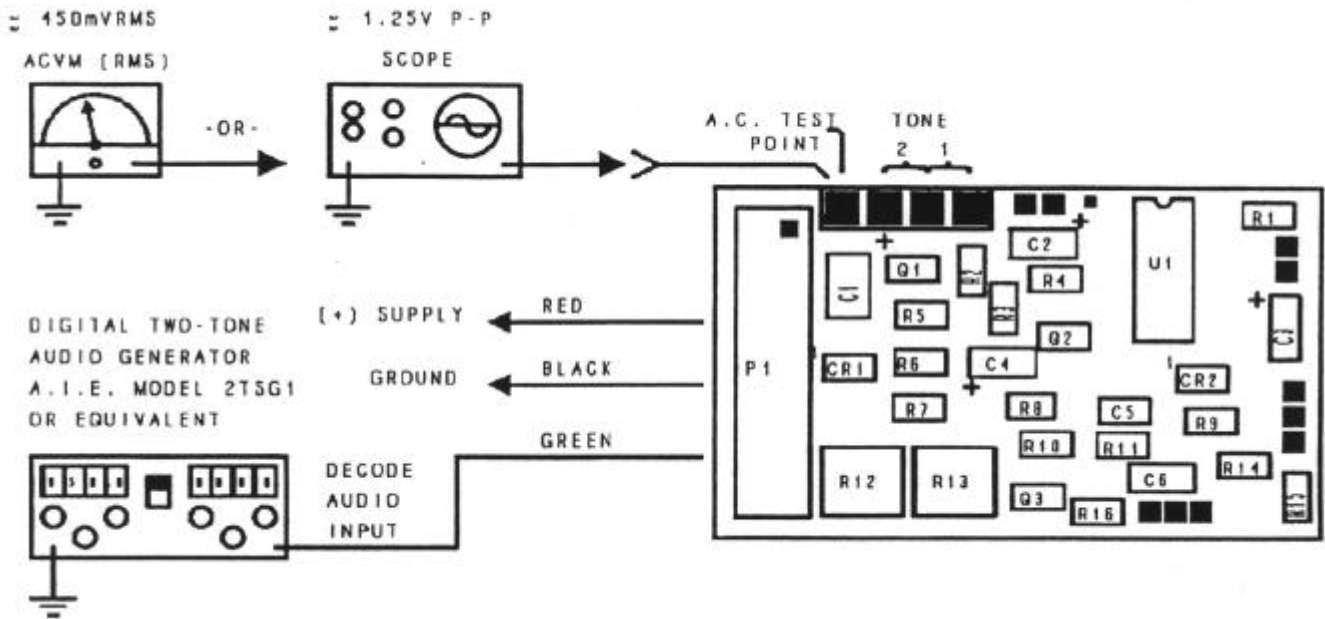
MODEL:	NC108-A	NC108-B
Signal Format:	Single tone	Same
Tone Format:	Tone detect 300ms nominal	Same
Frequency Range:	Continuously tunable (800Hz to 2900Hz)	Same (280Hz to 1500Hz)
Outputs:	[A] Selectable sink or source latched (Sinks-80mA @40VDE Sources-4.5VDC @500uA [B] 3 second momentary (Sinks-200mA @50Vds	Same
Inputs:	[A] Monitor reset [B] PTT Monitor	Same
Input Impedance:	>50K Ohms	Same
Input Sensitivity:	10mVrms to 2Vrms	Same
Bandwidth:	±1.50% typically	Same
Freq. Stability	Better than ±0.5%	Same
Operating Voltage	5.5 to 24VDC	Same
Operating Current	5mA	Same
Operating Temp.:	-20°C to +80°C	Same
Size:	0.825"W x 1.425"L x 0.20"H	Same
Mounting:	Double sided adhesive tape	Same
Interfacing:	Micro miniature header and 12" color coded cable assembly.	Same

--SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE--

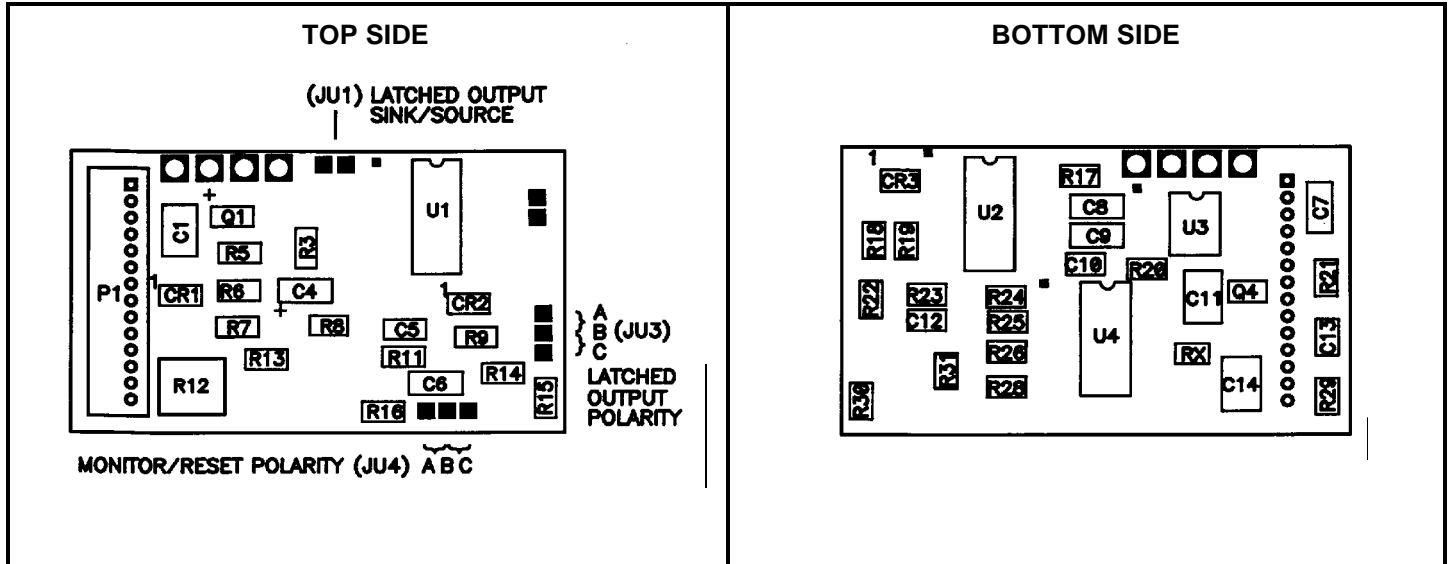
FREQUENCY ADJUSTMENT

Adjustment of desired tone frequency is easily performed and is tunable through its specified range.

- 1) Connect test equipment as shown below.
- 2) Apply desired tone frequency.
- 3) Adjust R12 for a maximum indication (Typically 450mVRMS or 1.25Vpp).
- 4) Remove test equipment. Unit is now operational.



P. C. BOARD LAYOUT



INTERFACING

The Model NC108 comes with a piece of double sided adhesive tape to eliminate the need for mounting hardware. When tuning of the decoder is completed, remove the protective covering from one side of the tape and apply to bottom side of P.C. Board. Make sure that mounting surface is clean and dry to insure positive mounting. Now remove protective cover from remaining side of tape and mount unit to desired location. To insure maximum operational reliability, the decoder should be mounted away from intensive R.F. and magnetic fields and all leads should be kept to minimum lengths.

RED Connect to +5.5VDC to +24VDC source.
(+)[SUPPLY]

BLACK Connect to system ground.
(-)[SUPPLY]

GREEN Connect **DIRECT** to receiver's discriminator output circuitry.
[DECODE AUDIO INPUT]

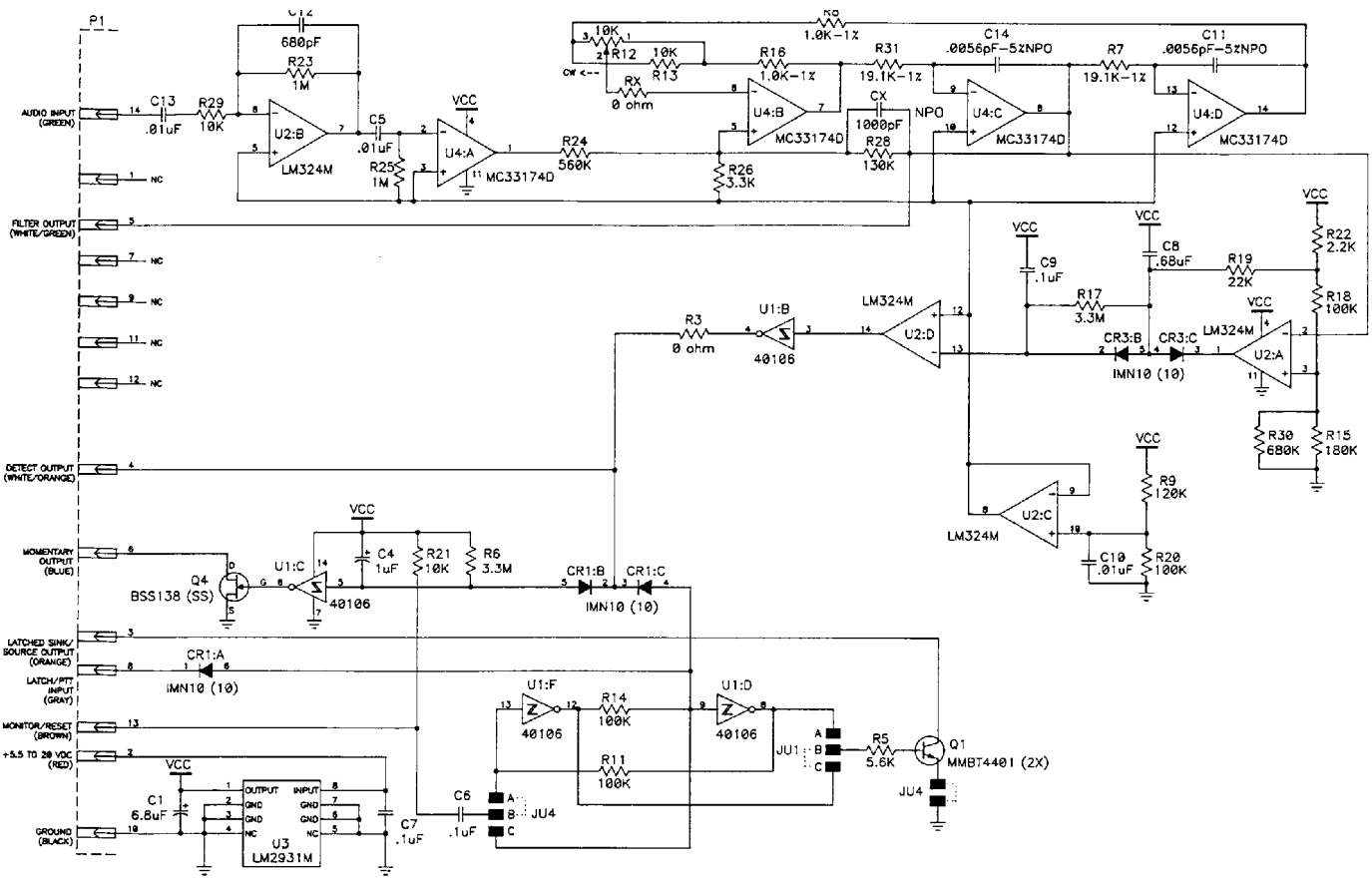
ORANGE The latched output lead is factory jumpered to provide an open collector "**HIGH**" (Above ground) upon
[LATCHED OUTPUT] detection of a valid decode or by use of the monitor/reset of latched enable input control circuitry. This output is an open collector transistor and will sink to ground 100mA @ 40Vce. **NOTE:** To reverse this function, remove solder bridge from JU3 pads B&C and solder bridge jumper JU3 pads A&B. To source output, remove solder bridge jumper from JU1 pads.

BLUE This lead is commonly connected to the vehicle's horn relay. This output is an N-Channel power MosFet and
[MOMENTARY OUTPUT] will sink to ground 200mA @ 50Vds. **NOTE:** To prevent damage to MosFet output, place a 1N4002 or equivalent diode across the horn relay.

BROWN The monitor/reset lead is factory jumpered to activate the latched output circuitry when "**HIGH**" (Above
[MONITOR/RESET] ground). This lead is commonly connected to the microphone hang-up switch or hang-up button on back of microphone. If used in portable radio (Handheld) applications, Then connect this lead to the tone/squelch switch. If this lead is not used, it **MUST BE GROUNDED**. **NOTE:** To reverse this function, remove solder bridge jumper from JU4 pads A&B and solder bridge jumper JU4 pads B&C.

GRAY This lead is commonly connected to receiver circuitry that provides a "**HIGH**" (+ voltage) and goes "**LOW**"
[LATCHED OUTPUT ENABLE] (To ground) when transmitter is activated. This function will provide the user of a portable radio, upon the momentary push of the PTT switch, to disable the decoder allowing monitoring of the channel.

SCHEMATIC



WARRANTY POLICY

NorComm products are unconditionally guaranteed for two (2) years on materials and labor from date of purchase.

All Warranty repairs must be performed at NorComm's Customer Service Department in Grass Valley, CA. Units under warranty can be returned for repair or replacement without prior authorization, however, a letter explaining the defect should be enclosed with the unit. Out of warranty units returned constitute Purchaser's authorization for NorComm to repair or replace equipment and to invoice Purchaser for any and all reasonable costs of repair labor, parts and freight.

NorComm shall not be obligated to repair or replace equipment rendered defective, in whole or in part, by causes external to the equipment, such as, but not limited to, catastrophe, power failure, or transients, environmental extremes, improper use, and maintenance or interfacing applications. NorComm further assumes no liability for any incidental or consequential damages which may result from the applications of its products by the Purchaser or any other party.

--SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE--